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ROLLEIFLEX & ROLLEICORD GUIDE



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THE TRUTH ABOUT THE ROLLEIFLEX

"Universal" cameras exist only in manufacturers' advertisements. Otherwise they are—and very probably will always be—just as absurd as the "universal" weapon, the "universal" aeroplane or, to come down to earth again, the "universal" horse. Whoever could seriously be attracted by a charger which was claimed to be just as excellent when employed as a pack-horse or as a polo-pony?

"Universal" cameras do not exist; but for that matter neither do "universal" photographers. The man who buys a camera to take pictures of his friends, his children or his holidays is unlikely to be just as much interested in commercial portraiture, high-speed records and photomicrography. There are, of course, still professionals of the type who cannot refuse to take a wedding-group to-day and cover a fox-hunt to-morrow. They will, however, compared with the man specializing in one field or the other, always be handicapped—unless they possess a super-human range of experience, matched by an equipment correspondingly extensive and expensive.

To be equipped for everything means to have more than just one camera. Admittedly, certain types of cameras can attain amazing versatility because of a fabulous range of specially-designed accessories. The price of such a camera, plus all the accessories, however, is often just as high as that of a collection of cameras. The argument, too, that this modern system of photography—one camera and many accessories—would take up considerably less space than a few cameras without accessories, is often overstated. What one photographer may declare to be a suitcase, another will consider to be a trunk. It all depends on what one is up to; whether one's subjects necessitate a versatile equipment or not.

It can safely be said—even discounting the content of millions of snapshotters with some sort of a box—that eight out of ten photographers need neither the legendary "universal" camera nor a particularly "versatile" one, but **5**

can produce very persuasive pictures with a reasonably "general" instrument.

The chief merit of the Rolleiflex—and of the whole Rolleiflex family, including a large number of illegitimate children of very similar appearance but different industrial parentage—is just that it makes a sensible and modern "general" camera. This may not sound much, but it means a lot in practice. A few years ago it was statistically shown that the pictorial output of these cameras scored heavily over other types in contests and exhibitions all over the world. Hundreds of thousands of amateurs swear by their Rolleiflex, and so do many well-known professionals. The Rolleiflex acquired the reputation of being an "easy" camera, easy to make good pictures with. It is a popular camera in the best sense of the word.

The reasons for such popularity are not too difficult to see.

Ground-Glass Focusing

It was the first camera to adapt the well-tried principle of ground-glass focusing in an up-to-date way, making it at the same time almost foolproof. All viewing and focusing is done through a special camera on top of the actual taking instrument. The lenses of "both"—the viewing and taking—cameras are synchronized, and every little movement of the viewing lens is faithfully followed by a corresponding adjustment of the taking lens. Focusing is done in comfort; it is not interrupted either by the film transport or by the moment of the actual exposure; the picture can be watched and corrected all the time. In addition, the lens of the upper (viewing) camera has a larger aperture than the lower (taking) camera. This means that it is more sensitive and selective, offering almost a guarantee that things that look sharp on the ground-glass really *are* sharp on the film. This comfortable method of focusing goes a long way toward persuading the photographer to rely on his own focusing abilities, instead of

6 taking refuge with the smallest possible lens-stop, which is

believed to give an "all-over" sharpness of the kind got from cheap box cameras. This discriminating, "critical" focusing automatically leads to emphasis on the main subject matter by good definition—thereby separating it from its background, the less well-defined rest of the negative: this is the first decisive step from the casual snapshot to a real *picture*. The ground-glass is the oldest and perhaps most efficient means of photographic education. Unlike any other view-finder it presents a two-dimensional full-size counterfeit of the photograph as it will look later. The man who cannot be taught to "see" photographically by the ground-glass of a camera will never learn to do so.

Medium Size Negatives

Neither the $2\frac{1}{4} \times 2\frac{1}{4}$ nor the $1\frac{5}{8} \times 1\frac{5}{8}$ film is "miniature" size in the strictest sense of the word. Contact prints made of these negatives are just large enough to be called, in a way, pictures. They are quite appreciated by people who like to carry the "latest ones" of their wives, children, pets and friends in their wallets. To become real pictures they should, of course, be enlarged just like miniature negatives. Whilst, however, the 24×36 mm. miniature negative wants a twelve times linear enlargement to result in a 12×15 in. "exhibition" positive, the $2\frac{1}{4} \times 2\frac{1}{4}$ in. Rolleiflex negative needs only to be enlarged *five* times to arrive at the same size of print (the $1\frac{5}{8} \times 1\frac{5}{8}$ Rolleiflex negative needs to be enlarged *seven* times). Thus, the Rolleiflex negative is not as a rule subjected to a forced degree of enlarging. Neither the designer of the camera nor its owner has to take pains in safeguarding definition and warding off coarsely-enlarged silver grain. Precise range-finding and a precision film guide in the camera are not needed to ensure microscopic sharpness. Neither is minutely-calculated exposure and delicate super fine-grain development required to reduce the silver grain of the sensitive emulsion to diminutive size. The technique of taking is less rigid and processing can be more straightforward than with "real" miniature cameras. All the **7**

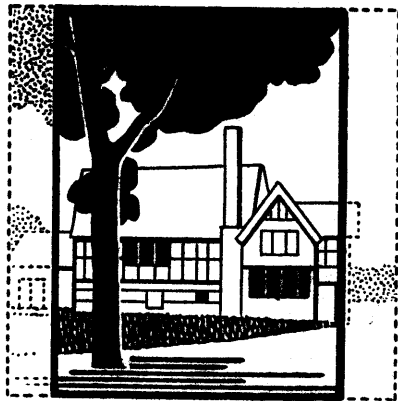
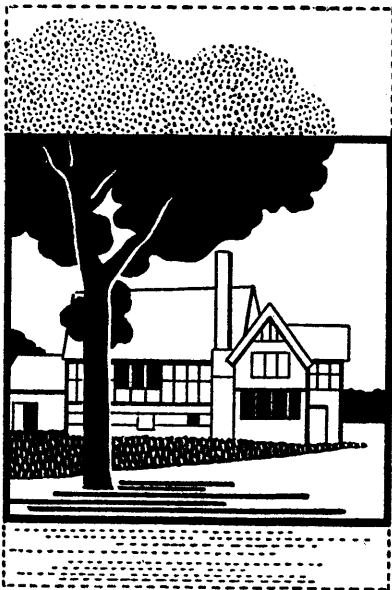
research work done in the service of the 24 × 36 mm. film has enormously benefited the user of the somewhat larger cameras like the Rolleiflex, without loading much of the burden of the new technique upon his shoulders. His pictures nowadays are finer in grain and have better definition than they used to—without his having to contribute a lot to this end. He should be thankful to his colleague with the smaller camera—for he is, if not better, certainly easier off.

Square Shape

The ground-glass of the Rolleiflex presents a square picture; the Rolleiflex negative has a square shape. Our lens defines a circle, and this circle is best utilized by the perfect quadrangle of the square—but this in itself is a purely technical consideration of no overwhelming consequence to the man who is more interested in pictures than in the niceties of optics. Essential, however, from a practical point of view, is the fact that the square representing the simplest geometrical pattern (next to the circle) lends itself easily to placing and framing almost any subject matter. Both conservative and modern, deliberate and subconscious attempts to “compose” a picture are carried out with less effort within the boundaries of the somewhat “neutral” square than within the upright or oblong rectangle which imposes its own basic proportions on the subject. With the square no weighty decisions are needed before taking the picture as to whether to approach the subject with the camera in a horizontal or vertical position. Should the square shape prove to be dull or otherwise unsatisfactory with a particular subject, it is still possible to print or enlarge only a portion of the negative, without sacrificing more of the subject than the other shaped cameras would have done from the outset. The square format certainly has the advantage of a greater pictorial latitude.

Breast-Level Position

Being a “reflex” camera, the Rolleiflex is supposed to be carried on a leather strap slung around the neck. The
8 natural position to operate it is at breast-level or lower.



The Square Shape (p. 8)

The square negative (top left) covers a wider field of view than the horizontal (top right) or vertical oblong (bottom right). Only the oblong of larger dimensions will cover more (bottom left).

In this position it can be firmly gripped and held steadily without effort. The camera having, in addition, a very smoothly working (Compur) shutter, "long" instantaneous exposures (e.g. 1/10 sec.) which are so risky to take with cameras operated at eye-level and by focal plane shutters become here quite safe; blur due to camera shake is a rare fault with Rolleiflex pictures. The breast or waist-level position has the further advantage that it presents a wide range of popular subjects—children, animals, people *in situ*—in a perspective much more genuine than the "looking down" habit of the eye-level camera. Cameras held comparatively low are also less conspicuous; they do not attract quite the same amount of attention as the "shooting" pose. The subject can be approached in a somewhat more casual manner with a camera slung around the neck than when holding it in front of one's face. The probable effect is a less self-conscious response by the subject. Modern informal portraits, candid studies can be got quietly and without fuss; one does not need to jump and wrestle for them.

Limitations

In spite of all the things just said, the Rolleiflex is not a miracle but an industrial product. Writers of advertising copy may never cease to shout that their goods are perfect; it is poor psychology and primitive salesmanship. Almost everybody knows these days that mechanical design is usually based on compromise. No battleship, no tank, no aeroplane can have both utmost speed and heaviest armament. Nothing and nobody can be safe and aggressive at the same time. The Rolleiflex is a reasonably "safe" camera, but not a very lightfooted one in attack. It is a compromise, and quite a clever one at that. Every one of its basic advantages will, of course, cast its own shadow. The main point, however, is that none of those advantages get outweighed by any of the drawbacks. Once they are clearly stated and realized by the man using the camera there will

10 be no disappointments. Limitations, shortcomings, pitfalls

are only dangerous when revealed too late. If considered in time they often can be cornered, mostly avoided and always guarded against. Nobody can have it both ways; but anybody may be able to think in more than one way.

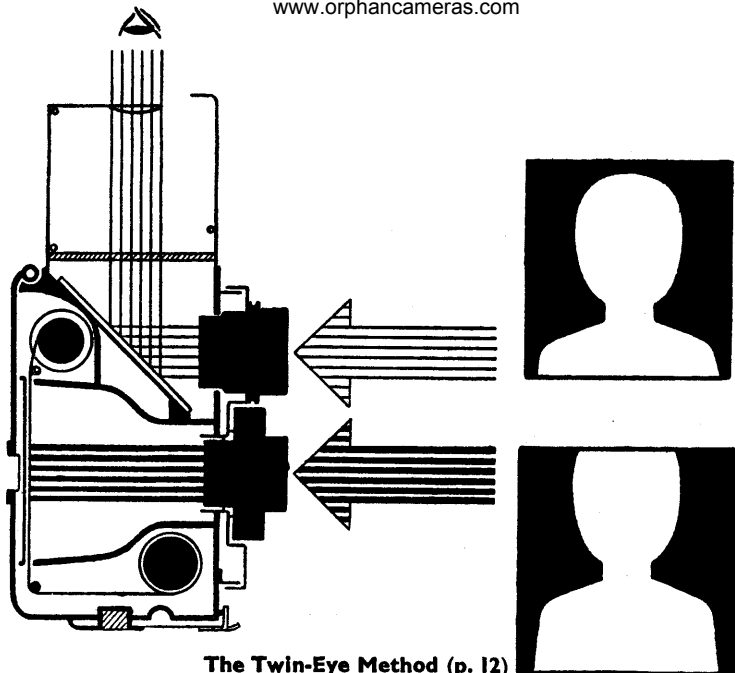
Let us now review what is typical of the Rolleiflex features and find out when and where they are likely to fail the man making use of them.

THE FOCUSING SCREEN. $2\frac{1}{4} \times 2\frac{1}{4}$ in. is not a very large area and $1\frac{5}{8} \times 1\frac{5}{8}$ in. is even smaller. Not everybody's eyes are good enough to control definition on the screen, particularly with the camera held in a low position at some distance from the head. The extension focusing hood can be quite a help, as it keeps out light, just like the old-fashioned focusing cloth of the studio, ensuring thereby better contact between the photographer's eyes and the projected image. One is easily enticed to make extensive use of the small magnifying glass inside the hood, but it is not without its own shortcomings. It shows only a small (central) section of the picture area, and by watching this particular spot one may lose sight of the whole. Again, this magnifying glass is used fairly close to the eye, which may persuade the photographer to abandon the low and safe camera position with all its advantages.

THE REFLEX PRINCIPLE. The image as seen by the viewing lens gets projected on to the focusing screen by a mirror. It is upright but laterally reversed. What is at the right in front of the camera appears left on the screen and vice versa. The subject apparently moving to the right must be followed with a swing of the camera to the left, i.e. in the opposite direction. It sounds more difficult than it is. One gets soon trained to it and will respond almost automatically in the correct manner, but only by concentrating on watching the subject exclusively on the screen. It is a mistake to divide your attention between the screen and the subject in the flesh, as photographers working with fussy little view-finders of some other cameras are in the habit of doing. Everything about the subject can be seen comfortably on the ground-glass; stick to it. **11**

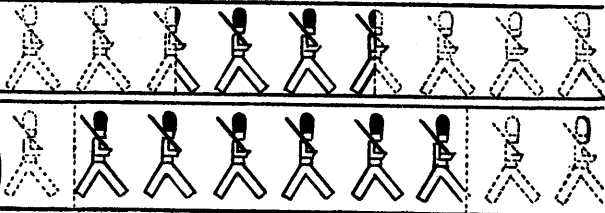
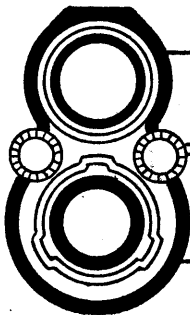
THE TWIN-EYE METHOD. Two lenses cannot possibly be fixed at one and the same spot. They must be some distance apart and consequently cover somewhat different areas—just as our two eyes do. In the Rolleiflex the lens that does the viewing is higher up than the lens that does the taking. Thus, the image viewed and focused by us is not strictly identical with the image photographed on the film. The image on the focusing screen would show more at the top than what actually will be photographed on the negative, and more will be photographed at the bottom of the negative than the focusing screen would show. This divergence of opinion between “view-finder” and camera lens is a very general trouble in photography, and is called “parallax”, which sounds good, but is a poor consolation to the photographer who happens to cut off half a head of his model because of it. Parallax seldom becomes seriously troublesome when photographing distant objects, mainly because no important part of the picture is likely to come very near to that dangerous upper edge. With the subject within three feet or so it is a different story. Some help is provided by the *Rolleipar* lenses which, fixed in front of the viewing lens, effect an adjustment of the image on the focusing screen. This adjustment, however, is confined to a definite distance between subject and camera. Should the subject move a few inches towards or away from the camera, the whole arrangement is likely to be upset and another *Rolleipar* lens will have to be used. Frankly, better than playing about with subsidiary lenses is to exercise caution when dealing with close-ups. Experience will soon go to show what the focusing screen does not do, namely, the width of the band at the top that is likely to be missing on the negative.

THE LENS. The lens of the Rolleiflex is of 6 cm.—7.5 cm. focal length; it has an aperture of $f2.8$, $f3.5$, $f3.8$ or $f4.5$. It is a comparatively short focal length and not very large an aperture as lens apertures go these days. This is convenient in one respect: the longer the focal length and the **12** larger the aperture, the more tricky the focusing gets; the



The Twin-Eye Method (p. 12)

The (upper) viewing lens projects the picture through the medium of the mirror to the eye, while the (lower) taking lens guides it to the negative. As the two lenses occupy different positions, the two pictures will cover slightly different areas. To leave a margin for errors the focusing screen of the Rolleiflex has been cut smaller than the actual film area. Only with close-ups can the "parallax"—become serious.



The (upper) viewing lens has a larger aperture than the (lower) taking lens, thus the viewing lens gives less depth of focus (p. 58), thereby ensuring that what appears to be sharp on the ground-glass will be really sharp on the film (p. 6).

Rolleiflex lens is easy to focus. An additional advantage, in a sense, is that the 7.5 cm. lens used in conjunction with the $2\frac{1}{4} \times 2\frac{1}{4}$ in. negative size (or the 6 cm. lens used in conjunction with the $1\frac{5}{8} \times 1\frac{5}{8}$ in. size) produces what could be called almost a wide-angle effect. The Rolleiflex gives a fairly broad view without backing away too far from the subject. This helps a lot when working in rooms with limited space, photographing in narrowish streets, taking animals and children who cannot easily be persuaded to keep inside the angle of view, and even when looking for suitable foreground motifs to give some landscape an emphasis of depth. The other side of the story, of course, is that $f3.5$ and even $f2.8$ are not fast enough for instantaneous exposures under adverse lighting conditions (night, theatre, etc.), and 7.5 cm. or 6 cm. is not long enough to photograph limited areas from a long distance (far-away mountain peaks, isolated architectural details, etc.) Now, the Rolleiflex lens is not interchangeable. Changing the Rolleiflex lens would obviously involve changing both lenses of the camera, or, at least, some efficient masking device to demarcate the areas covered on the focusing screen when changing lenses. The first method would be much too expensive, the second would not exactly facilitate focusing. The Rolleiflex had to go without a large outfit of lenses. Nevertheless, ways and means have been sought to give the camera a wider scope. There are subsidiary lenses to reduce the focal length further (from 7.5 cm. to 7.1 and 6.7 cm. or from 6 cm. to 5.4 and 5.6 cm.) for taking close-ups of small objects. These *Proxar* lenses are inexpensive and useful; they are, however, not quite as simple to focus as the Rolleiflex lens without subsidiaries. Then there is the so-called telescopic lens *Magnar*, which, fixed in front of the 7.5 cm. taking lens, will extend the focal length to 30 cm. (or in front of the 6 cm. lens to 24 cm.). To obtain satisfactory definition one has to stop down to $f22$. To avoid camera shake one has to work from a tripod. To find the focus the *Magnar* has to be placed first in front of the viewing lens and then can be changed over to the taking lens. To

14 buy the *Magnar* you must spend almost as much as you spent

on the rest of the camera outfit. . . . In fact, the Rolleiflex is not made for interchanging lenses, and it does not really need them either. The negative area is large enough to allow parts of it to be "carved out" and enlarged. One does thereby approach effects reasonably near to those obtainable by some of the fairly long focus lenses of miniature cameras with interchangeable lens outfits.

THE SHUTTER. The Rolleiflex shutter is a rapid Compur shutter. It is a mechanism of thin steel blades mounted between units of the taking lens. In order to effect exposure of the film, those blades covering the lens area have to open up and then close again. If the exposure is an instantaneous one, all this happens very swiftly. Still, during this "operating time"—opening up, closing down—the edges of the lens will remain temporarily covered by the blades. On account of this only gradual release of the entire lens aperture, the shutter does hinder large aperture lenses from exploiting their full speed. Before and after reaching the brief moment of full opening they act as a sort of lens stop. Shutters of other cameras behave differently. "Focal plane" shutters, e.g., are curtains with slits of variable width: when released, these slits rush across the film, exposing it inch by inch as it were. They do not waste fractions of the exposure time, nor of the light beaming through a large aperture lens. They have quite another vice. Once they come up against fast-moving subjects they are very likely to present somewhat distorted views of them. They may re-model circles into ellipses, squares into parallelograms, stretch or squash a body according to whether their slit lags behind or collides headlong with a subject, the image of which happens to move faster across the film than they do themselves. Focal plane shutters will go about as fast as 1/1,000 sec.; Compur shutters go only up to 1/500 sec. Neither of them is, at these top speeds, particularly efficient, although their limitations are of a very different nature. The most efficient use of the Compur is to avoid photographing very fast movement at close range where maximum shutter speed is needed.

THE FILM. There are twelve negatives on one roll of Rolleiflex-size film. Would it be of advantage to have much more on a single load? It is, to say the least, doubtful. Some professionals certainly prefer a larger reserve of photographic ammunition in the camera and hate to have to reload while they are on the job. Others, particularly among advanced amateurs, maintain that big loads have an adverse effect on their feeling of responsibility: they so often catch themselves snapping haphazardly and uselessly just to "finish the roll" or because "there is a lot of it in the camera anyway". Needless to say, this sort of habit does not improve one's photography. Neither is it good sport. Nobody could approve of going into the woods for shooting with a sub-machine gun. Sub-machine guns have uses of their own. But so have Winchesters, and so have Rolleiflexes. To follow this line of thought a bit further, machine-gun bullets are, piece for piece, probably cheaper than cartridges for a shot-gun. Similarly, you can get as many as three 24 x 36 mm. negatives for the price of one Rolleiflex negative. But don't you spend, as a rule, more machine-gun bullets on a hit than shot-gun cartridges when properly aiming at the bull's-eye? Again, you will waste fewer Rolleiflex negatives than is usually done with the "real" miniature size.

THE SQUARE SHAPE. We know the advantages of the square shape already: utilization of the full angle of view, simplification of picture design, one standard grip for holding the camera. Are there any disadvantages? With tall and slim objects (full-length portraits, perpendicular pieces of architecture, etc.) there will unavoidably be a certain amount of "waste" background left and right of the main motif. With horizontal subjects in front of the camera (flat landscapes, lateral motion and such-like) there is an unmistakable trend to abundance of "dead" foreground. In any case, both being merely problems of "too much", nothing is easier than to print only that portion of the negative which is an essential part of the final picture.

16 Further, it is a useful taking rule to get as near to the main

motif as any subject will allow; this concentrates outlook and saves film space all around.

THE LOW VIEW-POINT. It is excellent for photographing animals, children and people sitting. It is still good for full-length portraits and any motif with more fore-than back-ground. It is awkward for following quick action. It is hopeless in a crowd. The Rolleiflex, of course, is equipped with special means for viewing at eye-level and can be operated even by holding it over one's head. It goes without saying that none of these positions is a particularly comfortable or genuinely flexible one. The man who likes to make extensive use of them merely reveals that he does not quite appreciate the real advantages of Rolleiflex photography at its best. Frankly, it is safer—because it ensures better definition—to stand on a chair, a table, a ladder, or hang from a rope of a barrage balloon, always holding the camera in the reflex position proper, than to balance it at the tips of one's fingers somewhere in thin air without additional support.

Taking all in all—comparing the strong points of the Rolleiflex cameras as indicated in rather few words, with their weaker points as explained, perhaps, somewhat laboriously—is it a good camera? *It is.* Is it a “top” camera? *It is not, as far as lens- or shutter-speed goes.* Is it a successful camera? *It is one of the best “picture” finding and “picture” making instruments.* Is it a many-sided camera? *It is not, having definite limitations.* Is it a fussy camera? *It is probably the most straightforward photographic apparatus designed during the last twenty years.* Is it a camera “for me”? This is a thing you alone can decide. If you are all for excitement, fast tempo, big sports—look for something different. If you are a good-tempered type, who likes good-tempered pictures—choose the Rolleiflex. *It is a good-tempered camera.*

ROLLEIFLEXES AND ROLLEICORDS

There are many things which make the selection of a camera a more difficult matter than it would seem at first glance. There are personal considerations such as hands with long or short fingers, good or bad eyesight and so on, and the very personal one of the amount of money available. The large number of alternatives on the market, both Rolleiflex and Rolleicord models, do not make the choice easier, but the table on pp. 32-33 and the following detailed descriptions of the cameras may help a bit.

As a matter of fact all Rolleiflexes and Rolleicords are good cameras, but that in itself is not a very helpful piece of information. One indisputable fact, however, is that the more expensive a camera is, the better it will be. It follows, therefore, that the Automatic Rolleiflex is certainly the best value you can have for your money. The question is, do you require a camera with all these gadgets? Do you want to do quick shooting work, sports photos, picture series, stage photographs, and all the things that only a rapid-action camera and a shutter speed of 1/500 sec. can give? If so, you have the choice between the Automatic Rolleiflex and the Rolleiflex Standard New, and that should not be very difficult, because it is merely a matter of money.

If you prefer a smaller-sized camera, you will choose the small Sports Rolleiflex 4 × 4 cm., which is the ideal camera for the sportsman or the mountaineer who has to save every ounce of weight. It is also the right model for the lady.

Or if you are satisfied with less rapid work there are the two Rolleicords, which, in the hands of a skilful photographer, can do very much the same work as a Rolleiflex camera.

Of course, there are differences. The Rolleiflex cameras have a film transport crank, which is handy, quick and easy to use, whereas the Rolleicords have a knob instead; which is not quite so handy, but very reliable nevertheless.

Then there are the lenses: Zeiss *Tessar* in the Rolleiflex cameras, Zeiss *Triotar* in the Rolleicord models, the aperture being $f3.5$ in the Automatic and the Standard New models, and the Rolleicord II, while the aperture in the Rolleiflex 4 × 4 cm. with $f2.8$ is about 70 per cent. faster. The *Triotar* in the Rolleicord Ia and the Rolleicord II/4.5 is $f4.5$, i.e. 70 per cent. slower than $f3.5$.

The *Tessar*, well known all over the world, is a four-component lens, developed in 1907 and still going strong, while the *Triotar* is an uncemented three-component lens. From the point of view of results these two lenses are to all intents and purposes identical. What difference there is, appears in the enlargements. If you enlarge to more than 12 × 12 in. you will see that the *Tessar* pictures are still sharp and brilliant, while the sharpness and the brilliance of the *Triotar* pictures are not quite so good as in smaller enlargements.

accuracy in focusing that all the lenses can really work at their maximum definition and speed. Flatness of the film, reliable synchronization of the viewing and taking camera parts and their lenses are a matter of course with these cameras.

There are, finally, the different shutter speeds, 1/500 sec. with the Rolleiflex cameras, which may come in very useful, and 1/300 sec. with the Rolleicord cameras.

In weights, dimensions and precision there is practically no difference between the four $2\frac{1}{4}$ inch square cameras. The smaller camera, of course, is lighter.

The body of all cameras is cast in one piece, of a strong aluminium alloy, light, yet exceedingly strong.

The Automatic Rolleiflex ($2\frac{1}{4} \times 2\frac{1}{4}$ in., 6×6 cm.)

The Automatic Rolleiflex is, like all other Rollei cameras, a twin-lens reflex camera, and the characteristics here given are similar to those for the other Rollei cameras.

All of them consist of a rigid reflex camera for viewing, composing and focusing the picture, placed on top of another camera which is used solely for taking the picture. Each camera has its own lens, but both the lenses always move simultaneously and identically on the same front board, which glides smoothly on parallel, perfectly tooled guide rails, and, of course, both the cameras form one compact and inseparable unit.

With the exception of the focusing hood there is no folding mechanism whatever, so that the strong and rigid camera body ensures not only permanently accurate focusing but invariable precision as well.

The picture on the ground-glass of the viewing camera will be duplicated on the film by the taking lens below and will always be clear, brilliant and upright, though laterally reversed. Any changes of the diaphragm of the taking lens have no effect whatever on the viewfinder lens, which has no diaphragm at all.

These features, being the foundation of all the Rollei cameras, have been more or less refined in the different models, among which the Automatic Rolleiflex is the crowning achievement of the whole principle.

OPENING AND CLOSING. Before loading a camera with film, read these instructions and practise the methods of handling it; learn your possible mistakes before they happen, and find out how to make your methods foolproof. The Automatic Rolleiflex has been called the camera which excludes all possibilities of error, but if you neglect the few simple operations with which you have to make yourself familiar, you can't blame the camera.

To open the camera, turn the latch to the left in the direction of the arrow until it comes up against the stop. The lock now can slide forward and be released. The back panel can then be swung up.

To close the camera, press the back panel with thumb and palm firmly **19**

against the body of the camera and secure the catch, so that the bolt can be turned to the right.

The inside of the back panel has been fitted with a spring pressure plate, whose function it is to press the roll film flat against the picture frame in such a way that the film is firmly held in the focal plane. The picture frame of the Rolleiflex is comparatively large, so that Rollei pictures are in fact $\frac{1}{8}$ in. larger in both directions than those taken by other cameras of what is called the $2\frac{1}{4} \times 2\frac{1}{4}$ in. size. (Actual size of the picture of Rolleiflex camera, 5.9×5.5 cm. Actual size of the pictures of other cameras, mostly 5.6×5.6 cm.)

To remove the back panel, push up the two levers on the left- and right-hand strap holder and take the panel off. The Rolleiflex can now be used with the plate adapter (p. 107) or the cine-film attachment (p. 108).

LOADING. To load the camera with so-called No. 120 or $\times 20$ ($3\frac{1}{4} \times 2\frac{1}{4}$ in.) film, open the back panel of the camera and pull out the spring knob of the film-feeding spool at the bottom of the spool groove. Secure the knob by a slight left-hand turn, insert the new film spool in the groove and turn the knob until it springs back into position. The coloured surface of the cover paper should show on the outside. After tearing off the gummed seal, draw the pointed end of the backing paper—between the two rollers—slowly over the picture frame and push it as far as possible into the broad slit of the take-up spool, the empty spool being brought into position by turning the transport-crank. For this purpose the transport-crank is swung out into the operative position. Note that the slotted end of the take-up spool has always to go to the right-hand side to fit the crank. The take-up spool must be inserted well in its groove, if necessary by pulling out the spring-knob. It is a good idea to press lightly with the thumb of the left hand on the take-up spool. By cranking, wind the cover paper once round the spool to hold the film fast during transport. Take very good care that the edges of the cover paper do not get damaged during winding, and that it runs smoothly, otherwise it might upset the transport system or produce a leakage of light.

Now close the camera in the usual way and crank the handle four or five times, until it comes automatically to a standstill; this is the case after a slight but perceptible resistance. Then always turn the crank backwards, anti-clockwise, as far as it will go and fold it back into the rest position.

The Rolleiflex is now loaded, but in addition your camera has automatically performed a few more operations for you: 1. It has transported the film to the position for the first exposure by means of the "feeler" mechanism. 2. It has made the film counter or indicator indicate No. 1; and 3. It has reset your shutter, for film transport and shutter tensioning are coupled in such a way as to prevent double exposure.

20 And you did all that without knowing it, with the crank lever. There is a complicated mechanism behind this little crank, a mechanism like

that of a watch. The "feeler" mechanism, that adjusts the film automatically for the first picture, makes use of *one* fact only: that film and backing paper are glued together. The film is thin and the paper is thin, but where they join there is a double layer, and as soon as this "thick" layer passes the two rollers these "feelers" transmit—by means of tiny wheels and levers and what not—a kindly message to the transport lever that the film has just passed and is ready to start business. At the same time they put a call through to the indicator mechanism which announces that picture No. 1 is ready to be taken, and simultaneously the shutter and the self-timer (p. 24) are ready for action.

If you have taken your 12 pictures the indicator shows 12. And it shows 12 when you put your new film in the camera. But as soon as you close the camera again it jumps back to No. 0. There is a small release lever and on the inside of the back panel is a small projection. By closing the camera the lever is depressed by the projection, and so it works.

FILM-TRANSPORT. After picture No. 1 you want to make another exposure. Swing the transport-crank into the operating position and turn it downwards and backwards as far as it goes, then fold it back into its rest position. That is only to be on the safe side, because the swing of the handle becomes shorter from exposure to exposure, thus compensating for the decreasing diameter of the film-feeding spool and for the increasing diameter of the take-up spool. You can imagine the accuracy of this compensating drive when you see the equal spacing of the pictures on a film band.

UNLOADING. After 12 exposures you simply can't make those famous pictures No. 13 and onwards on the backing paper, because your Rolleiflex Automatic intervenes. The device that stops the crank is automatically put out of action; you can turn the handle freely to wind up the backing paper around the film, but you cannot make an exposure, because your shutter cannot be reset. So you must take a new film.

Do it with care! Do not unload an exposed film in bright sunshine, do it in the shade, and seal the exposed film at once, after having folded the pointed paper end sharply under, to make the opening for the development easier.

This Rolleiflex is really an automatic camera, for the owner cannot forget to reload the camera, because it does not work without film. He cannot forget to tension the shutter, as the shutter and the self-timer (p. 24) are always reset automatically. If the handle can be turned, it must be turned in order to advance the film and to reset the shutter. If it is locked, the film transport has already taken place and the shutter can be released. Blanks and double exposure are impossible, because a new exposure cannot be made before the film has been automatically advanced. Finally, you cannot release the shutter accidentally, because there is a special cap over the release knob.

Remember, however, that we have two cameras in one. Knowing our taking-camera, we are now going to have a look at the

VIEWING-CAMERA on top of it. This camera is the reflex camera **21**

proper, with a special finder-lens that has the large aperture of $f2.8$. The silver-plated metal mirror projects the viewfinder-image on to the focusing-screen. As this ground-glass has not been matted or merely etched in the usual way, but optically ground, it has a very fine grain and the projected picture is, therefore, extremely clear and brilliant. Thin lines divide the ground-glass into squares, so that vertical and horizontal lines in the picture are easily perceptible, and leaning lines can be avoided while composing and focusing the subject.

The *focusing hood*, which prevents the side lights from intrusion, is really nothing but the refined form of the old-fashioned darkcloth. Take the camera, with the leather strap slung round the neck, and release the catch of the focusing hood by pressing it down lightly. The focusing hood will then open up into position. Inside the focusing hood is a small magnifier lens.

Swing up the *magnifier* by pressing the forefinger on the hinge of the magnifier lens, while slightly pulling back at the same time. You can bring your eye close to the magnifier and watch the ground-glass while focusing. The magnifier can be removed from its holder and replaced by a special glass to suit those people whose sight is not good enough for fine focusing with the ordinary magnifier. People who usually wear glasses can do the focusing without their glasses, unless they suffer from astigmatism, a defect which cannot be rectified. The best magnifier lens for your eyes can be provided by your local optician if he is given the dioptric numbers of your own spectacles.

To get a clear view of the screen and the image on it, you should try at first to do without the magnifier. Later, when you are used to the manner of focusing, you will make increasing use of it, because through it you see the part of the picture larger and brighter, and are thus able to focus with pin-point sharpness.

FOCUSING. This operation is simplicity itself: you merely turn the focusing knob. This knob is provided with a meter scale which in itself is not of primary importance, although it comes in very handy for different purposes (p. 53), as fine focusing is always done by means of the ground-glass screen. By turning this knob a range of distances from "infinity" (∞) to approximately 2 ft. 8 in. (80 cm.) is covered. (More about focusing, p. 50.)

THE COMPUR RAPID SHUTTER is a between-lens-shutter, with speeds up to $1/500$ sec. It is always reset automatically by the film transport lever. The lenses and the shutter are built into the casing of the front-board, and at the top of this dustproof casing you see a tiny, glass-protected peep-window, which shows the stop in use and the shutter speed. No need to turn the camera out of its taking position in order to see stop and shutter setting; you merely peep over the focusing hood, and there you are! To adjust the stops and shutter-speed you want, you turn the two milled knobs protruding a little at the sides of the casing. See how the thumbs fall easily on the milled controls of aperture and shutter-speed, and the first finger of the right hand comes to rest on the release knob.

There are the following stops (diaphragm settings)—adjusted by the milled knob on the left—marked in black in the peep-window:

3.5	4	5.6	8	11	22
<i>1</i>	<i>2</i>	<i>4</i>	<i>8</i>	<i>16</i>	<i>32</i>

The numbers (in *italics*) underneath the line are not marked on the camera at all. They represent here a crib for the reader, to remind him that the exposure time has to be exactly doubled from stop to stop, so that for instance the exposure time with stop *f* 11 has to be eight times as long as with stop *f* 4. The dot between 11 and 22 marks the stop *f* 16, the narrow space not allowing the full marking on the camera.

The upper part of the peep-window shows the different shutter-speeds in red, adjusted by the milled knob on the right. The arrangement is like this:

B	1	2	5	10	25	50	100	250	500
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These figures represent fractions of a second: 1/1, 1/2 to 1/500 sec. Owing to a special spring which comes into action between 1/250 and 1/500 sec. it is impossible to alter the speed between these two numbers after the shutter has been reset. It is therefore important in this case first to change the shutter speed to 1/500 sec.—if this speed is necessary—and then to transport the film by means of the crank. All the other speeds may be altered before or after the resetting of the shutter.

When using an exposure meter (p. 87) you will frequently get a shutter speed of 1/40 sec. or 1/150 sec., speeds which are not marked in the peep-window. You can easily obtain these intermediate speeds by putting the shutter between the nearest marks. For 1/40 sec., for example, you set the shutter between 1/25 and 1/50 sec. or for 1/150 sec. between 100 and 250. On no account, however, is it possible to use the intermediate speed between 1/10 and 1/25 sec., because a wheel brake has to be reversed and might break if subjected to force. You will always perceive a slight resistance when turning the knob in the positions 25 and 500.

EXPOSURE. If one of the red numbers shows in the peep-window, the shutter will operate automatically at this speed when released. The shutter, always reset by the film transport crank, is released by depressing the release knob. The operation of this release is silent and smooth, nevertheless it may sometimes happen to the beginner that one or the other of his or her pictures is spoilt owing to movement caused by faulty release. It is of importance that the release button should not be pressed with a jerk, but in the following way. Press down release button carefully and slowly until a slight resistance is felt, then continue pressure and exposure takes place. If the release is effected in this way it is quite impossible to exert any pull or to impart any movement to the camera. When not in use, the protective cap should always be placed over the release button and over the lenses. There

is a two-in-one protective cap for the lenses of all Rollei cameras which, of course, has to be removed before taking a picture.

When the letter **B** shows in the peep-hole and you depress the release knob, the shutter will open. It closes again immediately the pressure is removed. This setting should be used for exposures between 2 and 5 seconds, whilst the camera is fixed on a tripod.

Long time exposures are to be made only when the camera is fixed on a tripod. In this case use is made of a cable release which can be screwed in the socket. The cable release is delivered with each camera. The shutter setting is on **B**.

The *self-timer* is a delayed action device to work the shutter some time after it has actually been put to work. The Rapid Compur shutter has no self-timer of its own. The Automatic Rolleiflex, however, contains a specially built-in self-timer, which is ever ready with a delayed action allowance of 12 seconds and may be used at all shutter speeds. If you want to make use of the self-timer, don't leave your tripod at home.

If you take plants, small animals, insects, etc., you should make use of the self-timer, to have your hands free to hold down a twig or to direct the animal into the way it should go. If you want to step into the picture after setting the release, do not choose too narrow a sector, or you will run the risk of leaving half your person out of the picture.

You make the self-timer work by pulling the milled knob to the right in the direction of the arrow. As soon as you hear a distinct whir, the mechanism runs down and you have about 12 sec. in which to take your place in the picture or to do whatever action you had in mind.

THE DOUBLE BAYONET RING FOR ACCESSORIES. There is one more feature of the Automatic Rolleiflex to be mentioned here. The lens is mounted in a double bayonet ring. All filters and auxiliary lenses (p. 105) can be attached to the *inner* ring by putting them on the lens and giving them a slight turn to the right. The lens hood and the tele-lens (p. 104) are placed in the bayonet mount independently of the other attachments upon the second, the *outer* ring of the bayonet. Then all parts are as secure as if made in one piece with the body of the camera. Both the view-finder and the taking-lens of the latest Rolleiflex models (Automatic and Standard New) are equipped with bayonet rings.

The Rolleiflex Standard New ($2\frac{1}{4} \times 2\frac{1}{4}$ in., 6 × 6 cm.)

In its new form, the Rolleiflex Standard (New) embodies nearly all the latest improvements of the Automatic Rolleiflex, and the two cameras are almost identical. In what respects, then, do they differ?

LOADING. The Standard model has no feeler mechanism and is therefore provided with a film window. Insert the film in the same way as in the Automatic Rolleiflex (p. 19). As there are no feelers, **24** you need not worry about them, but draw the pointed end of the cover

paper upwards over the picture frame and push it as far as possible into the broad slit of the take-up spool. By cranking, wind the cover paper once round the spool to hold the film fast during transport. Take care not to damage the cover paper. Close the back panel and secure the lock, *without for the time being turning the bolt to the right!* Now continue cranking until figure 1 appears in the film-window in the back panel. Then turn the crank backwards in an anti-clockwise direction as far as it will go and fold it back into the rest position. If necessary to reset film counter turn the milled wheel under the take-up spool.

The film-window, which merely served to mark the commencement of the film, has now fulfilled its purpose, and is closed by turning its catch bolt to the right. Now the camera is ready for its first exposure.

FILM-TRANSPORT and setting of the shutter are coupled in the same way as in the Automatic Rolleiflex. By turning the crank from stop to stop the film will be advanced and the shutter reset. The indicator shows which number of film is ready for exposure.

THE VIEWING CAMERA, focusing, etc., same as with the Automatic Rolleiflex (p. 19). The finder-lens of the Standard New is $f3.1$ as compared with the $f2.8$ lens of the Automatic Model.

THE SHUTTER, though the same as in the Automatic Rolleiflex, has no milled wheels. The stops and speeds are set by means of two levers on the shutter casing and are read off in a common peep-window, which can be observed from above. The lever on the right sets the speeds, the one on the left sets the stops.

EXPOSURE. The release of the shutter is operated in the same way as with the Automatic model (p. 19).

Delayed action exposures cannot be made with the Standard model, because this camera has no built-in self-timer. For exposures with delayed action, however, most of the usual self-timers can be used, in most cases in conjunction with cable release, the latter being supplied with every camera.

There are no more differences between the Standard and the Automatic models, so that you can operate it in just the same way, except the few items mentioned above.

The Rolleiflex Standard ($2\frac{1}{4} \times 2\frac{1}{4}$ in., 6×6 cm.)

The old Standard Rolleiflex camera is the predecessor of the Automatic Rolleiflex. It was the last of these cameras built without prevention of double exposure and without bayonet ring. It is the model known all over the world as the Rolleiflex. Therefore, it seems necessary to give a full description of this type, for this model is the most frequently used one all over the world.

The old Standard model has all the features of the other Rolleiflex cameras, as the crank, one peep-window for shutter speeds and stops, the ground-glass screen with a magnifier, etc.

On the other hand it seems to be somewhat old-fashioned to-day in comparison with the Automatic and Standard New types. There is no bayonet ring nor a feeler mechanism.

The finder-lens has an aperture of $f3.1$ instead of $f2.8$ of the Automatic, and there are three different kinds of taking-lenses with this camera. The most powerful lens is the Tessar $f3.5$ in a Compur Rapid shutter, with shutter speeds up to $1/500$ sec., similar to the new models. The two other types are fitted either with a Tessar $f3.8$ or a Tessar $f4.5$ in a normal Compur shutter with shutter speeds up to $1/300$ sec. only.

These latter cameras have two film windows, one in the back of the back panel and the other in the bottom of it. The film window in the back of the back panel is unnecessary to-day. It was made in those times when the film manufacturers thought it necessary to make a special film, 6×6 cm., 6 exposure, for these cameras. Now, however, only '120' films, $3\frac{1}{2} \times 2\frac{1}{4}$ in., are used in all Rollei cameras, and the second film window has become useless. But you cannot go wrong as a metal insert is provided to cover the window not in use. Should the "wrong" window be consulted, still no harm will be done, as nowadays all $3\frac{1}{2} \times 2\frac{1}{4}$ in. films show not only 8 numbers on the left-hand side but also 12 parallel numbers in the middle for the $2\frac{1}{4} \times 2\frac{1}{4}$ in. size.

Another difference is in the focusing hood. It has to be folded down in a special way with the old Rolleiflex, otherwise you cannot fold it at all. The way is to press down the sides of the lens hood, using the right and left thumb alternately in this order: right side, left side, back and lid.

The focusing knob of the old Standard model is smaller than that on the new cameras and the depth of focus scale differs between the models according to their year of construction.

All lens accessories have to be of the push-on mount type, and care has to be taken that they are not lost when working with the camera. In order to use bayonet ring fitted accessories a special adapting ring is necessary.

The Original Rolleiflex ($2\frac{1}{2} \times 2\frac{1}{4}$ in., 6×6 cm.)

It is still about in fair numbers. While in principle similar to the Rolleiflex Standard of the older type, it has no film crank and one has to wind the film-winding knob until the next number in the film window becomes visible. The film used in it is the old '117' for 6 exposures $2\frac{1}{2} \times 2\frac{1}{4}$ in. This is rather uneconomical apart from the fact that 117' spools are out of date and almost unobtainable. These cameras can be very easily converted so as to take the $3\frac{1}{2} \times 2\frac{1}{4}$ in. film '620' for 12 exposures. All that has to be done is to adapt the film-spool holder and key to the smaller opening of the '620' spool. (Any competent dealer will be able to get that done.) The film window fits as the '620' film is numbered from 1 to 12 (for 12 exposures $2\frac{1}{2} \times 2\frac{1}{4}$ in.) in the right position for our Rolleiflex window.

The Sports Rolleiflex ($1\frac{5}{8} \times 1\frac{5}{8}$ in., 4×4 cm.)

26 Apart from its smaller size, the small Rolleiflex camera is operated

nearly in the same way as the Automatic and the Standard camera. The following details differ from those models:

OPENING AND CLOSING. The back panel can be opened by depressing a catch with the right thumb. Lift back the panel slightly by means of the two side lugs, when the back panel can be turned up. To close, press back the panel with thumb and palm firmly against the body of the camera and secure the catch.

In order to use the small Rolleiflex with the plate adapter (p. 107), the back panel which has been opened and turned up at right angles to the camera can be removed by pressure on the spring flange to the left.

In addition to the catch, the back panel is also provided with a thread socket for tripod exposures.

LOADING. Open the back panel and depress lever firmly. Insert spool in the slot where it is fixed automatically. The coloured surface of the protective paper must be on the outside when unwinding the film. The gummed seal should only now be torn off and the leading ends of the adhesive strip be removed from the protective paper. Now pull the pointed end of this paper upwards and across the picture frame and insert it as far down as possible into the broad slit of the take-up spool. If necessary, adjust the spool by moving the transport crank slightly backwards or forwards. To do this the transport crank is brought out into the operating position. To avoid trouble, take care that the strip is wound on straight. A few turns of the crank suffice to secure the paper strip firmly in position. Close back panel and turn the handle until No. 1 appears in the film window on the back panel. Take care not to overturn this number. When slowly turning the crank you see through the film window first a hand, then four rows of dashes or sometimes dots, and immediately after them the figure 1. The film-window, having fulfilled its purpose, should be closed immediately by the cover slide. Now turn back the crank until the top stop is reached, and fold it into its rest position.

THE FILM TRANSPORT is operated by turning the crank. The film counter or indicator above the transport crank will not show any figure at all. To cause the counter mechanism to work, depress the pin which is sunk in the knob above the indicator-window. You will then see that the counter springs back to No. 1. On no account forget this indicator-pin, otherwise you lose control over your exposures. By turning the crank from one stop to the next you will transport the film, and the indicator will show the corresponding figures up to No. 12. It is advisable not to transport the film until shortly before the next exposure is to be made. Now, there is a red dot on the counter immediately after the No. 12 which *indicates that the film is completely exposed!* Fold up the handle when not in use. This is important, even between individual exposures, in order to prevent displacement of the film.

UNLOADING. Rotate the crank to and fro until the film is fully wound up. Open the back panel, pull out knob for the take-up spool and secure by giving it a light turn to left. Take out film with care and

seal it immediately. The empty spool below springs out following a quick depression of the lever and has now to be inserted above to serve as a take-up spool. The slotted hole must be on the right-hand side.

THE FOCUSING-HOOD springs up automatically and is ready for use when you release the catch for the hood. To close it, fold down the magnifier and press down the sides of the focusing-hood, using the right and left thumb alternately, in the following order: right side, left side, back and lid.

The lid of the focusing-hood can be used as a frame-finder for focusing at eye-level. Press the index finger against one of the leather-lined squares and release the catch. This causes the frame-finder to spring into the position of use, while the focusing-hood remains in its position. A small concave mirror is in the middle of the frame. When the eye is reflected in this mirror, that is to say when the pupil of the eye coincides exactly with the aperture in the concave mirror, the frame or diopter shows the exact outlines of the picture.

THE COMPUR SHUTTER is fully encased. The two levers fitted to the shutter, one at each side, serve for the setting of the apertures and the shutter-speeds visible in the common peep-hole, and are controlled from above. (Older models of this type have not got the peep-holes, and the speeds and stops have to be read off on the shutter itself.) The lever on the right sets the speeds, the one on the left the aperture of the lens.

The shutter-speeds in the peep-hole are marked in red, the apertures in black.

The one-lever Compur shutter is *not reset with the film transport!* It works like this: As soon as the shutter-speed is set in the peep-hole, pull the operating lever first to the right. Thus the shutter is reset. As soon as you pull it to the left the exposure of the indicated length is given automatically.

If the setting is at T or B, the release lever should on no account be tensioned! When setting the instantaneous speeds see that the operating lever is pressed firmly home, as otherwise the mechanism will fail.

If the letter **T** is visible in the peep-hole the shutter will be open when the release lever of the shutter is moved to the left. It does not close until that lever is moved again to the left. It is the setting for very long time exposures with the tripod.

Short time exposures should be made with setting **B**. If the letter **B** is visible, the shutter will be open when the lever is moved to the left. It closes again immediately when the pressure is removed.

For all the other important items of the Compur shutter (intermediate settings, etc.), see p. 23.

Delayed action exposures, see p. 25.

Rolleicord II

28 **LOADING.** Open the back panel by releasing the lock with the right thumb, holding the camera in the left hand. To close the camera,

press the back panel firmly with thumb and palm against the body of the camera until the lock snaps into position. To remove the back panel, open it until it is turned at right angles to the camera and press against the spring catch on the left-hand side.

Open the film packing and take the film out. Pull out the spring button, insert the spool and release the button. The coloured surface of the cover paper should be on the outside. Tear off the gummed seal and push the pointed end of the cover paper as far as possible into the broad slit of the take-up spool, after having drawn it straight upwards over the film guide and the picture frame. To avoid trouble, take care that the strip is wound on straight and that the edges of the paper are not damaged. The spool has to be adjusted by turning the winding-knob, instead of the crank (which is the feature of the Rollielflex cameras). By giving the winding-knob two or three turns and by resting the left thumb lightly on the take-up spool the cover paper will be kept taut. After a few more turns the winding-knob will come to a standstill and remain locked. To release this lock you press the spring locking-disc with the right index finger and turn on. The spring locking-disc is the centre of the winding-knob. This centre is adjusted on a spring and can be pressed down. The locking device becomes operative when a length of the cover-paper, always corresponding to one exposure, has been wound on. After each exposure the locking device has to be released by pressing the centre of the winding-knob (spring locking-disc).

Should the indicator still show the mark "0" from the last film, you can turn the winding-knob continuously, the locking device then not being in operation. Be careful, however, not to wind up too much of the cover-paper.

After having closed the back panel, slowly wind the winding-knob, paying careful attention to the red-film window at the bottom of the back panel. There are the usual warning marks, eventually followed by No. 1. Now press down the locking-disc of the winding-knob. Push simultaneously the milled knob under the film winding-knob backwards, and thus make the counter spring to No. 1. Close the film window.

THE FILM TRANSPORT can now be operated automatically by turning the winding-knob, whereby the film is stopped when the correct amount has been turned on. This prevents overlapping of the exposures and saves time, since the exposures are automatically counted. Should the milled knob be accidentally displaced, the winding-knob will be locked. In this case make the counter spring back to No. 1 and carry on in the usual way; only note how many exposures you have previously made, so as to make sure that you do not make more than 12 in all. In the counter window appears a small white circle when the 12 exposures have been finished and the milled knob has not been displaced. The winding-knob now being released, you can wind off the film completely and remove it by opening the back panel, pulling out the knob and fixing it by a slight turn. The empty spool is then used

as the take-up spool. Pull out knob and fix it, insert spool first on the winged pin of the right-hand side and push home; push in opposite pin by turning it.

THE SHUTTER is a single-lever Compur shutter with speeds from 1 sec. to 1/300 sec. On the right- and left-hand side of the shutter are two peep-holes showing the shutter-speeds and the apertures. These settings are effected by means of two levers, one at each side of the shutter.

For particulars about the use of the shutter, see p. 23.

There is, however, one exception: the shutter of the Rolleicord camera speeds up only to 1/300 sec. (not 1/500 sec.) and *the alteration of the shutter-speed between the last two settings is only possible before the shutter has been tensioned*, that is to say, that the resistance is here between 1/100 sec. and 1/300 sec. (while in the Rolleiflex it is between 1/250 and 1/500 sec.).

For delayed action use a special self-timer, which should be screwed into the cable release socket.

Rolleicord Ia

FOCUSING. Open the focusing-hood by pulling back slightly the locking lever. Then the hood springs into position for use. The magnifier, in its rest position outside the hood, is brought into position by turning it across the focusing-hood until it locks. A light pressure on the outside of the back-frame of the hood makes it spring back into the rest position.

Pictures from eye-level, especially sports pictures, can be taken by means of the view-finder frame of this camera. Press the centre of the cover of the focusing-hood down inwards until it locks automatically, then bring the eye very close up to the peep-hole. The frame shows the outlines of the picture. Press lightly from inside against the back panel of the focusing-hood and thus cause the cover to spring back.

For focusing by means of the focusing-knob, see p. 53. (The focusing-knob is on the right-hand side of the Rolleicords, on the left-hand side of the Rolleiflex.)

THE SHUTTER. The view-finder lens and the taking-lens in its Compur shutter are not encased. The shutter has no peep-windows whatever, with the result that the settings of the shutter-speeds and the aperture have to be read off from the metal rings round the lens. This single-lever Compur shutter is operated as seen on p. 28.

Old and New Rolleis

Countless second-hand Rollei cameras can be had all over the world, and therefore it may happen that certain items of this book do not fit the camera in the reader's possession, because it happens to be an oldish model. That does not matter as far as the general handling of the camera

is concerned, but it does, of course, when we get down to details like loading, aperture reading, etc.

As a matter of fact the Rollei cameras have been altered nearly every year and have been improved all the time; the *Sports Rolleiflex* had its predecessor in the *Baby-Rolleiflex* which had no peep-window for shutter-speed and diaphragm, both being arranged in the same manner as they are now on the Rolleicord Ia camera, the lens being a Tessar f 3.5.

The *Rolleicord II* and *Ia*, too, had their predecessors in the 'Metal Plated' *Rolleicord*, fitted with a Zeiss Triotar f 4.5. The focusing hood was similar to that of the 'Rolleiflex Standard Old', the film transport was without locking device, the rest as given for *Rolleicord Ia*. *Rolleicord I* showed leather covering instead of the metal plating and incorporated a Zeiss Triotar f 3.8, otherwise similar to the model just described. The older Rollei cameras had smaller focusing-knobs and the engraved distance readings—first without depth of focus scale—have been altered several times. The figures are almost always given in metres, seldom in feet.

The distance figures compare as follows:

NEWEST MODELS $2\frac{1}{4} \times 2\frac{1}{4}$ in. (6×6 cm.)

Metres ...	∞	20	10	6	4	3	2.5	2
Feet ...	∞	66	33	20	13	10	8	6' 6"
Metres ...		1.7	1.5	1.3	1.1	1	0.9	0.8
Feet ...		5' 6"	5	4	3' 6"	3' 4"	3	2' 6"

There is a dot between 6 and 5 and 5 and 4 feet, meaning $5\frac{1}{2}$ feet and $4\frac{1}{2}$ feet.

OLDER MODELS $2\frac{1}{4} \times 2\frac{1}{4}$ in. (6×6 cm.)

Metres ...	∞	20	10	6.5	5	4	3.3	2.8	2.5	2.2	2	1.8	1.7
Feet ...	∞	66	33	21	16' 6"	13	11	9	8	7	6' 6"	6	5' 6"

(Feet are not indicated with these cameras.)

The new models of the small Rolleiflex have the same engraving as the larger cameras, the older models as follows:

SPORTS-ROLLEIFLEX $1\frac{1}{8} \times 1\frac{1}{8}$ in. (4×4 cm.)

Metres ...	∞	12	7	5	4	3	2.6	2.3	2	1.8	1.6
Feet ...		40	23	16' 6"	13	10	8' 6"	7' 6"	6' 6"	6	5' 3"

(Feet are not indicated with these cameras.)

Alterations have been made with the accessories, especially with the cine-film equipment. Practically all the old accessories can be used on the old and new cameras. To use the new accessories with bayonet fitting on the old type cameras a special adapting ring will have to be obtained.

THE DIFFERENT ROLLEI

Rolleiflex and Rolleicord $2\frac{1}{4} \times 2\frac{1}{4}$ in. = 6×6 cm.
 Rolleiflex $1\frac{5}{8} \times 1\frac{5}{8}$ in. = 4×4 cm. gives 12

Model	Weight and Dimensions	Lens	Fastest shutter-speed	Shutter tensioning and release
Automatic Rolleiflex $2\frac{1}{4} \times 2\frac{1}{4}$ in. = 6×6 cm.	33 oz. Height $5\frac{1}{2}$ in. Width $3\frac{5}{8}$ in. Depth with lens $3\frac{3}{4}$ in.	Tessar f 3.5 3 in. = 7.5 cm. Bayonet ring	1/500 sec.	Tensioned by film-transport crank Release knob Cable release
Rolleiflex Standard New $2\frac{1}{4} \times 2\frac{1}{4}$ in. = 6×6 cm.	27 oz. Height $5\frac{1}{2}$ in. Width $3\frac{5}{8}$ in. Depth with lens $3\frac{3}{4}$ in.	Tessar f 3.5 3 in. = 7.5 cm. Bayonet ring	1/500 sec.	Tensioned by film-transport crank Release knob Cable release
Rolleiflex Standard Old $2\frac{1}{4} \times 2\frac{1}{4}$ in. = 6×6 cm.	26 oz. Height $3\frac{3}{4}$ in. Width $3\frac{3}{4}$ in. Depth 5 in.	Tessar f 3.5 or f 3.8 or f 4.5 3 in. = 7.5 cm.	With f 3.5 1/500, the others 1/300	Single lever tensioning and release Cable release Not reset by film-transport
Sport Rolleiflex $1\frac{5}{8} \times 1\frac{5}{8}$ in. = 4×4 cm.	18 oz. Height $4\frac{7}{8}$ in. Width $2\frac{1}{4}$ in. Depth with lens $3\frac{1}{2}$ in.	Tessar f 2.8 $2\frac{3}{8}$ in. = 6 cm. Bayonet ring	1/500 sec.	Single lever tensioning and release Shutter is not reset by film-transport Cable release
Rolleicord Ia $2\frac{1}{4} \times 2\frac{1}{4}$ in. = 6×6 cm.	27 oz. Height $5\frac{1}{8}$ in. Width $3\frac{1}{2}$ in. Depth with lens $3\frac{1}{4}$ in.	Triotar f 4.5 3 in. = 7.5 cm.	1/300 sec.	Single lever tensioning and release Cable release Not reset by film-transport
Rolleicord II $2\frac{1}{4} \times 2\frac{1}{4}$ in. = 6×6 cm.	29 oz. Height $5\frac{7}{8}$ in. Width $3\frac{7}{8}$ in. Depth with lens $3\frac{1}{4}$ in.	Triotar f 3.5 3 in. = 7.5 cm. Bayonet ring	1/300 sec.	Single lever tensioning and release Cable release Not reset by film-transport
Rolleicord II/4.5 $2\frac{1}{4} \times 2\frac{1}{4}$ in. = 6×6 cm.	28 oz. Height $5\frac{7}{8}$ in. Width $3\frac{7}{8}$ in. Depth with lens $3\frac{1}{4}$ in.	Triotar f 4.5 3 in. = 7.5 cm.	1/300 sec.	Single lever tensioning and release Cable release Not reset by film-transport

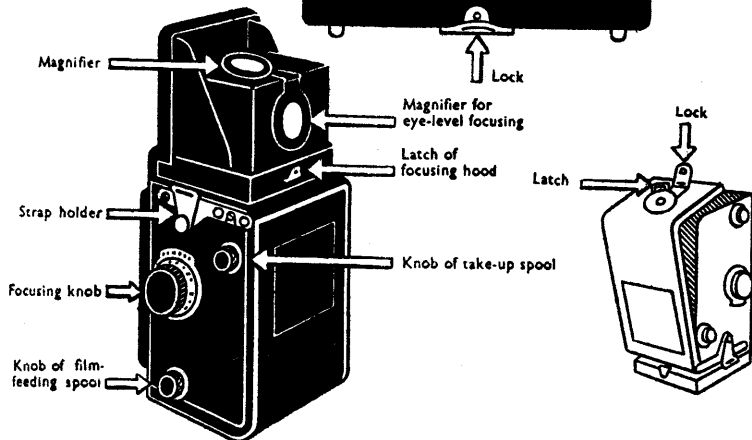
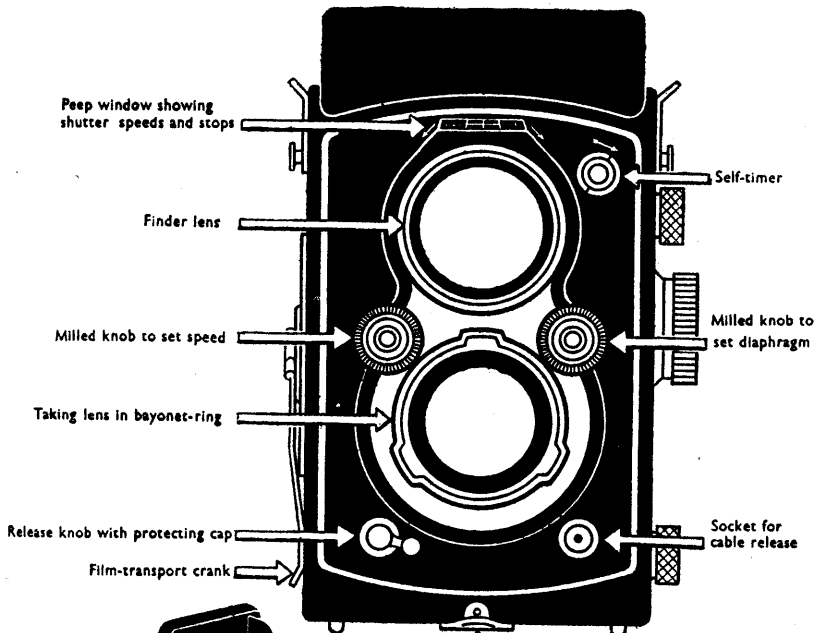
MODELS COMPARED

give 12 exposures on B2 No. 120 or 20 film
exposures on A8 No. 127 film (V.P. size)

Film-transport	Film-indicator	Diaphragm and shutter-speeds	Viewfinder for use at eye level	Accessories available
Crank	No film-window Automatic film-feeler mechanism Automatic film-indicator Double exposure impossible	One peep-window at the top Milled knobs for changing both	Mirror device	All Rollei accessories can be used Magnar lens f 9, 30 cm. Built-in self-timer
Crank	Film-window to mark beginning of film. No feeler Automatic film-indicator from No. 1 Double exposure impossible	One peep-window at the top Two levers for changing both	Mirror device	All Rollei accessories can be used Magnar lens f 9, 30 cm.
Crank	Two film-windows to mark beginning of film. No feeler Automatic film-indicator from No. 1	One peep-window at the top Two levers for changing both	Frame-finder with concave mirror	All Rollei accessories without bayonet ring can be used
Crank	Film-window Indicator has to be reset by pin	One peep-window at the top Two levers for changing both	Frame finder with concave mirror	The ciné-film equipment is not supplied for this type. All other accessories can be used. There is a special plate-adaptor $1\frac{1}{2} \times 1\frac{1}{8}$ in. Magnar-lens f 7.3, 24 cm.
Knob	Film-window Indicator has to be reset by knob	On shutter, not visible from above Lever for speeds Ring for stops	Frame-finder with peep-hole	Bayonet-mounts for filters and lenses cannot be used, but all other accessories will fit
Knob	Film-window Indicator has to be reset by knob	Two peep-windows on each side of shutter Two levers for changing both	Mirror device	All accessories can be used Magnar lens f 9, 30 cm.
Knob	Film-window Indicator has to be reset by knob	On shutter, not visible from above Lever for speeds Ring for stops	Frame-finder with peep-hole	Bayonet-mounts for filters and lenses cannot be used, but all other accessories will fit

HANDLING THE AUTOMATIC ROLLEIFLEX

- I. **OPENING THE CAMERA.** (1) Take camera in right hand, upside-down, lenses in the palm of the right hand (but without touching the surface of the lenses). (2) With forefinger of left hand turn latch to side in direction of arrow. Lock is now loosened. (3) Press with forefinger of right hand against lock, grip with forefinger and thumb of left hand the two side-nipples and pull the back panel down.
- II. **CLOSING THE CAMERA.** (1) Take camera in right hand. (2) Press back panel with the flat of the palm of the left hand firmly against camera body until (3) lock inserts with audible snap. (4) Turn latch with left forefinger inward.
- III. **REMOVING THE BACK PANEL.** (1) Pull up the two levers to remove the back panel on the right- and left-hand side of the camera. (2) Open camera (see I.). (3) Lift up the back panel and remove it. The camera can now be used with the cine-film attachment or the plate adapter.
- IV. **LOADING THE CAMERA.** *Do it in the shadow!* (1) Open camera (see above) and hold it with left hand. (2) Pull out with right hand the knob for the taking-up spool and turn it a little to the left, so that it locks and remains pulled out. (3) Take the new film spool in the right hand and insert it in the spool-groove. (4) Turn the knob back so that it springs into its original position. (5) Remove, always with right hand, the seal from the film and (6) draw the pointed end of the backing paper between the two feeler-rollers and down over the picture frame. (7) Insert as deep as possible the point of the backing paper in the broad slot of the take-up spool which is in each camera. *Note that the slotted end of the take-up spool has always to go to the right-hand side to fit into the crank.* (8) If not adjusted in position, do it by turning the film transport crank and by (9) pulling out the knob for the taking-up spool. (10) Wind a few turns of the backing paper with the transport crank tightly on the spool. (11) Take care not to damage the edges of the backing paper, which must run smoothly without hitch. (12) While doing this, place thumb of left hand lightly on the middle of the take-up spool. (13) Close the camera (see II.) and (14) turn the crank three or four times, until you feel a slight resistance and the crank comes to a standstill. (15) Now turn the crank counter-clockwise until it comes again to a standstill. (16) Put the crank back to its rest position. *The camera is now automatically set for the first picture:* (a) The film is set for picture No. 1. (b) The film indicator indicates No. 1. (c) The Compur shutter is tensioned.



- V. THE FOCUSING-HOOD.** *To open:* (1) Release catch for focusing-hood. (2) The hood springs automatically up into position. *Using the magnifier:* (1) Press hinge of magnifier mount and (2) swing magnifier into position, (3) while pulling back at the same time. (4) Bring eye close to the magnifier and turn focusing-knob.—*Use at eye-level:* (1) Take care to leave magnifier in rest position. (2) Pull lever for mirror at eye-level up to the stop, (3) while exerting a slight pressure with thumb on the front of the focusing-hood. (4) Peep through the double magnifier provided in back panel of focusing-hood.—(5) To move back the mirror, press lightly on same lever, which springs back automatically into its initial position. *The focusing-hood cannot be closed until the mirror has been folded back!*—*To close:* (1) Fold over front edge of focusing-hood until it (2) springs home.
- VI. FOCUSING** is done by turning the focusing-knob until the picture on the focusing-screen appears sharp. (1) Turn the knob with the left hand. (2) Observe picture in ground-glass screen. (3) Stretch forefinger of left hand until it reaches the milled knob for the setting of the diaphragm. (4) Turn milled knob until the wanted stop appears in peep-hole above finder-lens (black figures).
- VII. EXPOSURE.** (1) The right hand is below the camera, supporting it. (2) The right thumb is on the milled knob for setting the exposure time, (3) turning it until the wanted exposure-speed is to be seen in the peep-hole (red figures). (4) The right thumb changes its position by falling down from the milled knob to the release knob. (5) Press the release-knob with the right thumb (or by operating cable-release, screwed in the threaded bush below the shutter on the left).
- VIII. TRANSPORT OF FILM.** (1) The right hand grips the transport crank, (2) one swing of the crank downwards and backwards as far as it goes and the film is transported, the shutter tensioned again and the indicator adjusted for the next shot. (The swing of the crank becomes shorter from picture to picture, thus compensating for the increasing diameter of the take-up spool.)
- IX. CHANGING FILM.** *Do it in the shadow!* When the crank is no longer checked and can be turned round freely until the film is completely wound off, the camera automatically indicates the end of the film spool. No more exposures can be made, because it is impossible to reset the shutter without inserting a new film spool. (1) Wind off spool. (2) Open the camera (see I.). (3) Pull out knob for taking spool and fix it (see IV.). (4) Lift exposed spool out of the camera and (5) seal it at once. (6) Pull out knob for film-feeding spool. (7) Lift out the empty spool and (8) insert it in the groove for the take-up spool. (9) Then see again IV.